

The Effect of Art, Culture and Physical Education on Student Characteristics

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ABSTRACT

In this study, the effects of art, culture and physical education (ACP education) on the characteristics of students were investigated. Art, culture and physical education is a combination of cultural arts education and physical education. Cultural arts education is actually a term used by the Korean government since 2004 to reflect the meaning of popular culture in order to prevent arts education from being understood as meaning only fine arts. The Korean government sought to use cultural arts and physical education as a source of future national competitiveness. Now it also means cultural education, art education, and physical education respectively. Characteristics considered in this study included four relating to the student as an individual (self-concept, creativity, autonomy and happiness) and two determined by the student in relation to other students (the sociality and adaptability of the student). A program connected to the local community arts and culture institute had a significant effect on all characteristics except sociality. Students who participated in club activity hours were happier than those who did not. The Creativity-Personality Education Week support program had a positive effect on both self-concept and autonomy. Following the introduction of a Free-Semester System, the happiness of middle school students increased because of the expansion of club activities and programs connected to local community arts and culture institutes.

Keywords: Art and Culture Education, Physical Education, Student Characteristics

Introduction

The Free-Semester System, which offers students the flexibility to participate in a variety of activities during one semester of middle school year, was implemented in 2013 as one of the major education policies of the Korean government. As a result, its art, culture and physical

education (ACP education) revitalization policy also is more prominent than before (Ministry of Education, 2015). ACP education is a field that the Korean government and academic world was concerned about before the Free-Semester System (Choe & Kim, 2013; Ewha Women's University, 2009; Ministry of Culture and Tourism & Ministry of Education and Human Resources Development, 2004; Ministry of Education, Science and Technology & Ministry of Culture, Sports and Tourism, 2010).

Narrowing the range to the Free-Semester System model of the city of Seoul, art, physics, and student clubs were emphasized as part of the major curriculum. Before Free-Semester System model started following programs had worked. An art and culture education center was

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established in Seoul to encourage both the potential and talent of students under the banner of 'one student, one art and culture, one physical activity'. This center currently supports a maximum of five lecturers, utilizes a standing (permanent) program from the Seoul Creativity and Personality Education Center, and has designated 11 schools as Art and Culture-Oriented Creativity Sensibility Schools. Support for middle school music education and physical education area has been given through school sports club leagues and regionally connected physical education activities (Seoul Metropolitan Office of Education, 2015).

Despite the long-term interest in ACP education itself, few studies have been conducted to assess what the effect of utilizing ACP education is in these schools. Studies that explore the appropriateness of, or devise activation plans for, the application of ACP education to schools are more common than analyses of the effect of ACP education (Choe & Kim, 2013; Ewha Women's University, 2009; Ministry of Education, Science and Technology & Ministry of Culture, Sports and Tourism, 2010). Analysis of the effect of ACP education is necessary to confirm the importance of promotion of the Free-Semester System policy, since ACP education is an important part of the free-semester system. More specifically, it is critical to examine the effect of ACP education on the characteristics of students.

Prior Research

ACP education combines art and culture education

and physical education. Most prior research has studied either art and culture education or physical education separately.

The Free-Semester System and ACP education. Before reviewing ACP education, the Free-Semester System should be defined. The Free-Semester System has been a major policy of the new government of South Korea since 2013. During one semester of middle school year, the system offers students the flexibility to participate in a variety of activities, such as discussion and practical activities, in order to help students find their dreams and talents in a classroom setting (Ministry of Education, 2017). The school day is split into two parts: subject classes and Free-Semester. Free-semester is divided into four sections: career search activities, theme selection activities, art and physical activities, and club activities. In the Free-Semester portion of the school day, students do not have midterms or finals, and it does not apply to their grades or to high school entrance examinations. The Free-Semester System is not an after school program; it was designed to help students find their dreams and make memories by avoiding the burden of academic work. Since the Free-Semester System takes place during the regular school day, it is different from the concept of after school clubs and can be seen as an alternative to existing school classes. Furthermore, it is not a direct alternative to Korean private education institutes, but because it reduces the stresses of study, the burden on existing private education institutions such as academy can be reduced to some extent. As a private education institution in Korea, academy is reported to occupy a

Table 1. Art and Culture Education Programs by External Institutes

Program	Period	Institution	Nature of institution
Target 1(Vulnerable classes) Hometown Museum Program	2005-present	Korea University	Private institute
After School Art-Culture Program for Islands	2009-2012	Incheon Foundation for Arts and Culture	Public + private
Art-Culture Program for Youth	2007-present	Donga (media)	Private institute
Arts and Culture Education After School	2009-present	Busan Foundation for Arts and Culture	Public + private
Target 2(All students) Program to Support the Artist	2007-present	Korea Art and Culture Education	Public
Art Program for Small Schools	2008-present	Korea Art and Culture Education	Public
Art and Culture Program School Curriculum	2012-present	Seoul Foundation for Arts and Culture Gwangju Foundation for Arts and Culture	Public + private
Art and Culture Education for a Happy School	2011-present	Gangwon Foundation for Arts and Culture	Public + private

significant portion (66%) of private education expenses (Statistics Korea, 2016).

Art and culture education in schools. Before discussing the effects of art, culture and physical education, examining how culture, arts, and physical education have been conducted in the past may shed light on the overall progress of education in these fields. There are two types of art and culture education in schools. One is performed by external institutes, and the other is performed by teachers in schools. Recently, the former has been more important because it may affect socially vulnerable classes (low-income family, a single parent family and so on).

Table 1 shows the details summarized. Korea University held the Hometown Museum Program for students in economically vulnerable classes. Its goal was to expand opportunities for art education for underprivileged children and to provide art-culture education. The Hometown Museum Program consisted of 16 classes (Kim, 2010). The After School Art-Culture Program for Islands was meant to make students in Incheon Island more sensitive. Thirteen elementary schools, four middle schools, and four high schools were selected in 2012. The Art and Culture Program for Youth was implemented by Donga and the Hanjin Corporation. Since 2007, 40 cities have been supported, such as Inje in Kangwon, Yeoncheon in Gyeonggi, and Hapcheon in Kyungnam. Students in those cities have fewer chances to come into contact with art and culture than students in large cities. Art and Culture Education after School was performed by the Busan Foundation for Art and Culture. This program had four focuses: creative thinking, art activities, performance, and literacy. Once schools chose a focus from among the four types, the program was taught in thirty classes over the course of six months.

Controversies and Limitations

Although the prior research is significant, there are still some controversies. An ongoing issue is the question as to what the effect of art and culture education actually is. More specifically, whether the effect of art and culture education is on the individual or on a group, such as a school or class.

Jung (2012) insisted art and culture education have a linked organizational benefit, such as local environmental improvement, the expansion of opportunity to local people,

and improving a school's external reputation. Baik (2012) also asserted that the Dream Orchestra program provided the chance to engage in music education and created social change through music. Both studies focused on a collective rather than the individual. Most other researchers have used individual points to explore participation rate in cultural activities, preference for art as dependent variables of art and culture education (Kim & Choi, 2013; Kim et al., 2015; Kwack, 2010; Sung & Kim, 2012).

The effect of art and culture education may also be different according to the target. The effect of art and culture education varies between groups of adults and of students. Even when targeting students, the effects of art and culture education chosen by researchers were different for general school students and special education facilities students. For example, when Kim and colleagues (2015) examined the effect of art and culture education targeted to adults who completed secondary education, they dealt with knowledge about culture and preference and degree of participation in culture activities as the dependent variables. In contrast, Kwak (2010) studied the effect of art and culture education programs targeted to a child welfare institution in the Seoul area, and chose tendency for depression and decrease in guilty conscience as the dependent variables. Im and colleagues (2013) studied the effect of art and culture education on 4th through 6th Grade elementary school students. In addition to the demonstrated differences between groups observed, researchers have both individual and collective perspectives. As a collective, they tend to describe the effects of art and culture education as influencing creativity, life satisfaction, and happiness. Individual researchers describe the effects as being on sociality, school adaptive ability, and family relationships.

Table 2 shows that quantitative research on art and culture education also demonstrated effects. Kim and colleagues (2015) explained that art and culture education had a positive effect on forming cultural capital, but did not show any effects on enjoyment or on actively engaging in art and culture activities. Im and associates (2013) illustrated how the Saturday Culture School raised creativity, life satisfaction, happiness, and relationships between school and family members. Lim & Chung (2014) described the effect of art and culture education on students in correctional institutions and juvenile training schools, and found that stress decreased while sociality, preference for art and culture, self-control, and confidence improved.

Table 2. Quantitative Studies on Art and Culture Education

Researcher	Dependent variable	Control variable	Method
Kim et al. (2015)	Knowledge about cultural capital	Sex, age, local, education level, income, family class	ANOVA multiple regression
Lim & Jung (2014)	Stress, sociality, preference of art, self-control level	Previous score (covariant)	Two group Pretest-Posttest
Im. et al. (2013)	Creativity, satisfaction, happy, sociality, adjustability	Sex, grade	Two group Pretest-Posttest
Kwack (2010)	Reduction of depression	Previous score (covariant)	Two group Pretest-Posttest

Kwack (2010) also noted a decrease in depressive tendencies.

In contrast, Sung & Kim (2012) said that they could not identify a significant effect of art and culture education after conducting the Dream Orchestra Program and analyzing confidence, self-control-efficacy, and preference for difficult tasks. Only limited studies have been conducted concerning art and culture education experiences or education. Some prior quantitative research has consisted of ANCOVA analysis controlled using a pretest score. However, this method does not lead to sufficient causality to judge the effect of art and culture education. Many variables may affect the dependent variable. For example, stress, happiness, life satisfaction, and depressive emotions could be affected by factors external to the study. To judge the effect of art and culture education, it is necessary to use panel data analysis, which controls the factors that affect the dependent variables over time. For example, PISA(Programme for International Student Assessment) and PIAAC(Programme for the International Assessment of Adult Competencies) are case of global panel data. This study tests the hypothesis that, even if analyzed through panel data, the effects of cultural arts and physical education programs will be positive.

Method

Most prior studies that have investigated ACP education used only one year of data. In the current study, we used a regression model to investigate the effect of the ACP education program on student characteristics. Prior research indicated both individual and group effects of ACP education. However, collecting data is difficult at the school or class level (Baik, 2012; Jung et al., 2012).

Seoul Education Longitudinal Study (SELS) data (Seoul Education Research & Information Institute, 2016), was used in this study in order to acquire both student and school data to measure the effect of art and culture education.

Data

The SELS data was collected by the Seoul Educational Research and Information Institute (SERII), an affiliate of the Seoul Metropolitan Office of Education, and was constructed in cooperation with development researchers, schools, and survey service providers. SERII established an investigation plan, selected development researchers and survey execution service providers, and analyzed the data. The questionnaire was developed by confirming the questionnaire items using internal and external experts. In the case of the target schools, the data were constructed and managed through cooperating teachers.

The SELS is an annual survey of sample panels in the 4th grade of elementary school, first year of junior high school, and first year of high school. SELS began in 2010 to collect and analyze data on Seoul education policy and students' overall educational activities over a long period of time (SERII, 2016). The elementary and junior high school students sampled in 2010 were observed over six years, until 2015.

SELS provides long-term follow-up data for the subject matter. This data is different from existing Seoul education data because it can be used to examine long-term trends and processes, track the same subjects, and examine school characteristics, academic achievement, creativity, and career maturity as well as individual characteristics (SERII, 2016).

Sample

SELS data from a total of 142 middle schools in Seoul Metropolitan City was used. This data was collected in 2013 from first year middle school students and also in the two following years, 2014 and 2015.

Dependent Variables

The focus of this study was the effect of ACP education on autonomy, creativity, self-concept, happiness, sociality, and the ability of students to adapt to schools. The main dependent variables used in this study were selected based on the work of Lim and colleagues (2013), who used creativity, life satisfaction, happiness, sociality, school adaptability, and family relationships as relevant personal characteristics. Sociality and adaptability were used in the current study as the characteristics of society, and creativity and happiness as personal characteristics (Lim et al., 2013). The self-directed learning and future-oriented competencies (creativity, personality, sociality, etc.) included in the policy goals of the Free-Semester System announced by the Ministry of Education (2013) inspired the addition of a self-control variable, autonomy. To examine the overall effect of the Free Semester, a variable related to happiness education was added as a personal characteristic to represent the policy of happiness education (Shin et al., 2014).

Our interest variable was related to the arts, culture, and physical education programs present in each school. Among schools, a number of different arts and culture clubs and creative participation activities could fulfill the requirement for arts and cultural programs.

Table 3 summarized dependent variables we focused.

In the case of autonomy, we used the average value of three questions which included observance of the rule, task cling, and thinking ahead of action. Creativity included the mean of nine questions regarding curiosity about new things and originality, expresses individuality appropriately, and so on. Self-concept was the average of five questions concerning subjects such as thinking of themselves in an optimistic fashion. For happiness, we used only a single question that asks whether they were happy or not. Sociality consisted of the average value of four questions related to affiliation. Adaptability was composed of five questions that probed satisfaction at school, whether the relationship between teacher and student was smooth, whether they enjoyed working with other people, and other similar areas. Finally, this study used school characteristics and the characteristics of the teachers and principals to control for school characteristics that influenced other dependent variables like autonomy, creativity, self-concept, happiness, and sociality.

Internal Consistency

Cronbach's alpha coefficient was used to check the consistency of the variables. Cronbach's alpha measures the reliability or consistency between variables. According to the rule of thumb, an alpha coefficient of 0.8 or greater indicates very strong consistency, and a value of 0.6 or greater indicates acceptable consistency. The results were as follows. The scale reliability coefficient value was approximately 0.89, indicating that the six key variables had very strong consistency throughout the responses. Average inter-item correlation was approximately 0.58.

Table 3. Dependent Variables

Variable	Variable explanation
Autonomy	An average of three questions related to self-control on the student survey
Creativity	An average of nine questions related to creativity on the student survey
Self-concept	An average of four questions related to self-concept on the student survey
Happiness	Value of the 10 th self-evaluation question (very happy)
Sociality	An average of four questions related to students on the relationships among students survey
Adaptability	An average of three questions of Satisfaction for school, the 3 rd and 4 th questions about school climate, two questions about learning attitude, and the 8 th question of the self-evaluation survey (some questions coded reversely)

Independent Variables

Table 4 presents independent variables. The treatment of this study was whether the ACP education program was implemented or not. The specific program names and variables are as follows. First, creative participation activity operating hours means the other curriculum program except regular curriculum. Regular curriculum means Korean, Mathematics, Society, Music and so on. The other curriculum program composed of four variables which are autonomous activity, club activity, voluntary service activity, career activity. Second, arts and culture education we set seven variables which are visiting art lecture, various arts and culture education support, inviting talent donation club activity, connection with local community arts and culture related organization, creativity-personality education week support program, reading club, summer/winter reading class. Third, physical education part, it includes four variables which are advanced sports club operation, sports volunteer work system, vacation sports class, visiting sports class.

Experimental Design

We analyzed three years of middle school data to determine the effect of ACP education on the autonomy,

creativity, self-concept, happiness, sociality, and school adaptability of a student using linear regression analysis. However, because there was not plentiful prior research and thus a lack of model fit, there could easily have been reverse causality, endogeneity or omitted variable biases. To counteract this, a method such as an instrument variable, regression discontinuity design, or propensity score matching is typically used. For our study, a random effect model that regarded the invisible characteristics of observations as parameters was used to estimate a pooled-ordinary least squares (OLS) model.

Fixed Effect Model and Random Effect Model

Since three years of SELS panel data was used, the fixed effects and random effects must be accounted for over time. The functional formula is as follows.

$$Y_i = \alpha_i + \beta P_i + \gamma S_i + \delta X_i + v_t + e$$

Y_i is the characteristic variable of individual school i , P_i is the principal characteristic variable of school i , S_i is the school characteristic variable of school i , X_i is the regional characteristic variable of school i , v_t is the year variable, and e_{it} is the probable error term.

Table 4. Independent Variables

Program name	Name of variable	Variable explanation
Creative participation activity operating hours	Time in hours of autonomous activity	Time in hours of autonomous activity in one year
	Time in hours of club activity	Time in hours of club activity in one year
	Time in hours of voluntary service activity	Time in hours of voluntary service activity in one year
	Time in hours of career activity	Time in hours of career activity in one year
Arts and culture education	Visiting art lecturer	Yes (1), no (0)
	Various arts and culture education support	Yes (1), no (0)
	Inviting talent donation club activity	Operate (1), not operate (0)
	Connection with local community arts and culture-related organizations	Operate (1), not operate (0)
	Creativity-personality education week support program	Operate (1), not operate (0)
	Reading club	Operate (1), not operate (0)
	Summer/winter reading class	Operate (1), not operate (0)
Physical education	Advanced sports club operation	Operate (1), not operate (0)
	Sports volunteer work system	Operate (1), not operate (0)
	Vacation sports class	Operate (1), not operate (0)
	Visiting sports class	Operate (1), not operate (0)

Assuming a panel linear regression model, the functional formula is as follows.

$$y_{it} = \alpha + \beta x_{it} + u_i + e_{it}, \quad i = 1, 2, \dots, n \text{ and} \\ t = 1, 2, \dots, n$$

Using a one way fixed effect model controls for invisible observation characteristics (u_i). Adding a time dummy variable controls for natural change over time and creates a two-way fixed effect (Kim, 2015). In a two-way effect model, invisible observation characteristics (u_i) are regarded as parameters to estimate, but in a random effect model, this is regarded as a random variable, not a parameter. In a random effect model, first-order auto-correlation occurs when estimated by OLS, in this case, Generalized least squares (GLS) estimation is used. No relation is assumed to exist between an explanatory variable and observation characteristics ($cov(x, u_i)=0$). When this assumption is correct, by estimating using modified OLS, we can get a consistent and effective estimator (Min & Choi, 2013). In a panel linear regression model, whether to regard the error term as having a fixed effect or a random effect is determined by a Hausman Test. If the null hypothesis is rejected by Hausman test, a fixed-effect model is selected. Pooled-OLS estimates the linear regression coefficient value without regarding the given data as panel data. For this, the basic OLS assumption must be satisfied. The assumption for selecting the OLS model is as follows.

Table 5 shows the final result of model choice. To decide which model to use, we used the fixed-effect model when rejecting the F value of the fixed-effect model.

To decide between a pooled-OLS and random-effect model, a Breusch-Pagan's Lagrangian Multiplier (LM) test was done. If rejected, we would use a random-effect model. In Table 5, the leftmost column identifies how to use the model according to the results of each test on the dependent variable. For example, in the case of dependent variable Self-concept, Breusch-Pagan's LM test result was rejected and the Hausman test was rejected, so random effect model is selected. If the three test results do not match, we select a model that supports the most test results. In the case of Self-concept, Fixed Effect's F result is not rejected, but we chose Random effect model not Pooled-OLS.

Results

Table 6 presents that approximately 72% of students attended public school over the three years covered by this study (2013–2015). The average number of classes was 24–25, and the number of arts and culture clubs was about 3.5, a rate of 15–17%. Sports activity clubs also showed similar figures. The rate of irregular teachers was 15–17%. The rate of master's and doctoral teachers was about 13%, and the average teaching period was about 20 years. In the case of creative activity participation, operating hours were affected by whether the activity was autonomous or part of a club, volunteer, or course activity. Activity participation increased from the year 2003 17, 16, 4, 6 to the year 2014 35, 32, 7, 14 and

Table 5. Analysis Model Choice

Dependent variable	Self-concept	Creativity	Autonomy	Happiness	Sociality	Adaptability
Fixed Effect's F (reject: Fixed effect model unless: Pooled-OLS)	0.0015 (not rejected)	0.1073 (not rejected)	0.2126 (not rejected)	0.0000 (rejected)	0.3410 (not rejected)	0.0004 (rejected)
Breusch-Pagan's LM (reject: Random effect model unless: Pooled-OLS)	0.0019 (rejected)	0.0385 (not rejected)	0.0059 (rejected)	0.0075 (rejected)	0.0949 (not rejected)	0.0000 (rejected)
Hausman Test (reject: Fixed effect model unless: Random effect)	0.1957 (not rejected)	0.5815 (not rejected)	0.2569 (not rejected)	0.6407 (not rejected)	0.7145 (not rejected)	0.7776 (not rejected)
Final analysis model choice	Random effect model	Pooled -OLS	Random effect model	Random effect model	Pooled -OLS	Random effect model

* reject level: $p < 0.01$

Table 6. Descriptive Statistics

Variables		2013		2014		2015	
		Mean	SD	Mean	SD	Mean	SD
School Characteristics	Public or otherwise	0.72	0.45	0.72	0.45	0.73	0.45
	Number of classes	25.36	7.35	24.37	7.07	24.63	6.72
	Number of arts and culture clubs	3.47	1.38	3.51	1.59	3.55	1.47
	Number of sports clubs	3.36	1.41	3.62	1.43	3.45	1.28
Parent Characteristics	Income average per month (1,000 Won)	519.69	738.08	507.42	468.47	492.68	206.14
Teacher Characteristics	Rate of irregular occupation teachers	15.0	0.08	17.0	0.37	15.0	0.08
	Rate of master's and doctorate teachers	13.99	5.50	13.78	5.49	13.57	5.86
	Average length of teacher career	19.90	5.55	19.87	3.63	20.18	5.25
Creative participation activity operating time hours	Hours of autonomy activity	17.87	24.22	35.81	26.29	3.90	10.22
	Hours of club activity	16.70	22.59	32.42	25.51	3.79	9.81
	Hours of voluntary service activity	4.02	4.45	7.50	3.92	0.87	2.02
Arts and culture education	Visiting art lecturer	0.39	0.49	0.46	0.50	0.58	0.50
	Various arts and culture education support	0.32	0.47	0.36	0.48	0.43	0.50
	Program connected to local community arts and culture institutes	0.56	0.50	0.41	0.49	0.55	0.50
	Creativity-personality education support program	0.58	0.49	0.55	0.50	0.49	0.50
Physical education	Advanced sports club operation	0.46	0.50	0.57	0.50	0.56	0.50
N		142		110		98	

it decreases a little again, to 3.9, 3.7, 0.9, 1.3 hours. The rate of art lecture program incorporation saw a continuously increasing trend, from 39% to 46% and then 58%. The rate of local community arts and culture related organizations becoming connected to the program increased by year, from 39% to 41% and then 55%. Table 6 details the characteristics of the schools, teachers, and principals, as well as creative participation activity operating time hours and ACP education programs.

The Effect of ACP Education on Student Characteristics

Table 7 reports main results. Hours of autonomy activity increased self-concept 0.5%. Hours of club activity and creativity participation increased the happiness of students 1.0%, but hours of voluntary service activity decreased self-concept, autonomy and happiness each 5.2%, 4.5%, 6.9%. Visiting art lecturer decreased autonomy 16%. When arts and culture education was provided, autonomy and the happiness of the individual student decreased each 15.7%, 32.7%. When Program connected to local

community arts and culture provided five examined areas (self-concept 15.7%, creativity 15.8%, autonomy 19.1%, happiness 34.6% and adaptability 13.0%) increased. When a creativity-personality education week support program was operated, self-concept and the autonomy of students increased each 14.8%, 15.1%. Advanced sports club operation did not significant both student's individual and social area.

The result of the study that club activity operation hours increased the happiness of students supports previous studies that indicated students who participated in club activities showed higher satisfaction in school life than those who did not (Choi, 2010; Kim, 2006; Song, 2002; Won, 2002). Lee (2013) indicated that elementary student participation in school sports club activities affected the happiness index significantly, which is related to club activity operation hours. However, among arts and culture education, activities related to sports clubs did not have a significant effect. Sports club activities cannot be said to increase the happiness of students.

Programs connected to local community arts and culture institutes had positive effects in almost every area. The level of faculty in the local community, the scale of

Table 7. Effect of ACP Education on Student Characteristics

Dependent Variables		Student's individual area				Student's social area	
		Self-concept (RE)	Creativity (P-OLS)	Autonomy (RE)	Happiness (RE)	Sociality (P-OLS)	Adaptability (RE)
Creative participation activity operating time hours	Hours of autonomy activity	0.005* (0.002)	0.001 (0.003)	0.004 (0.003)	0.004 (0.004)	0 (0.002)	0.001 (0.001)
	Hours of club activity	0.004 (0.002)	0.004 (0.003)	0.005 (0.003)	0.010* (0.004)	0.004 (0.002)	0.001 (0.001)
	Hours of voluntary service activity	-0.052** (0.017)	-0.025 (0.019)	-0.045* (0.019)	-0.069* (0.032)	-0.019 (0.018)	-0.012 (0.010)
Arts and culture education activity	Visiting art lecturer	-0.088 (0.069)	-0.099 (0.073)	-0.160* (0.074)	-0.152 (0.135)	-0.047 (0.070)	-0.069 (0.040)
	Various arts and culture education support	-0.088 (0.069)	-0.026 (0.075)	-0.157* (0.076)	-0.327* (0.133)	-0.013 (0.072)	0.003 (0.040)
	Program connected to local community arts and culture institute	0.157* (0.068)	0.158* (0.076)	0.191* (0.076)	0.346** (0.129)	0.142 (0.073)	0.130*** (0.039)
	Creativity-personality education-week supporting program	0.148* (0.066)	0.043 (0.074)	0.151* (0.074)	0.089 (0.124)	0.02 (0.071)	0.017 (0.038)
Physical education	Advanced sports club operation	-0.078 (0.065)	-0.1 (0.072)	-0.065 (0.073)	-0.115 (0.122)	-0.046 (0.070)	-0.055 (0.037)
	Value of intercept	3.872*** -0.535	3.398*** -0.566	2.943*** -0.573	4.014*** -1.065	3.656*** -0.546	3.990*** -0.315
Observations(N)		346	348	346	351	348	351

*p<0.05, **p<0.01, ***p<0.001

accommodation, the variety of programs, and the secure professional group of the lecturer, all help to create a student experience of a varied 'arts and culture education' rarely encountered in school. Jung and colleagues (2015) selected the main reasons for the expansion of programs connected to local community arts and culture institutes as local community faculty and the utilization of infrastructure. That field can be divided to three parts that history of the local community, culture festivals and use of local special products. Especially, the frequency of the practical use of galleries and museums was high. Furthermore, they have emphasized the emergence of art education centers, expansions of presentation opportunities using public culture facilities, and the connection of school education donations and social contribution teams in companies.

The creativity-personality education week support program had a positive effect on self-concept and autonomy. The creativity-personality education week support program itself stimulated the creativity of students and is extra-

curricular, which could be the reason for this.

The limitation of this study is the way of data analysis. The average value of each school student score was used as the school data. Hierarchical Linear Modeling can be used to analyze the data at the first and second levels. First level is student data, nested in second level. Second level would be school data. However we use the average value of student survey response of one school as school level data. Second, there are many characteristics of individuals. We did not explore all of the students' personal characteristics with the selection of variables we explored in this study. Instead, we discussed the personal characteristics that we were interested in. Third, in this study, we focused on the effects of cultural arts and physical education on students' personal characteristics, which means that we did not focused on school characteristics. Further research should be conducted to analyze the characteristics of schools where culture and arts physical education is activated. If the systematic characteristics of the activated school are confirmed, it is possible to

spread positive effects to other schools.

As a result of the analysis, many cultural and arts physical education programs that were expected to have a significant effect on student characteristics did not appear as significant. This may be in part because in some cases, the sample size was not large.

Conclusion

In this study we analyzed the effect of arts, culture and physical (ACP) education for middle school students included in the fourth through sixth years of the Seoul Education Longitudinal Study (SELS). For the standard for ACP education in the individual area, four indexes were selected: self-concept, creativity, autonomy, and happiness. In the social area, two indexes were selected: sociality and adaptability. We asked the following questions. What relations are there between ACP education and these indices? Are the relations between ACP education and the happiness of students connected to 'Happy Education,' which was emphasized by President Park Geun-hye's government?

The major analysis results were as follows. First, the longer the club activity operation hours, more the happiness of students increased. This supports the conclusions found in previous research. Above all, it supports the 'Happy Education' policy, which was promoted by the Ministry of Education and Government. Policy can be further developed in this area and can also be studied more to determine how to improve the lives of students.

Second, as a specific 'arts and culture education activity,' it appears that programs connected to local community arts and culture institutes had a positive influence on five areas (self-concept, creativity, autonomy, happiness, and adaptability). External programs that students have not experienced affect students. Nowadays, local areas can provide personal and instrumental education resources in addition to more traditional schooling. Education should be conducted not just by schools and teachers, but also by the local community.

Third, the creativity-personality education week support program had a positive influence on self-concept and autonomy. Creativity-personality education encourages students to think independently. This leads to the production

of new and fresh ideas. Students' creative ideas can in some cases surpass those of adults. Personality education gives students what they need to achieve this; what is more, it is a recommended activity.

The following are recommendations for future political actions based on this study. First, make more studies progress. The fact that longer club-activity operation hours increased the happiness of students means that club activity hours have different influence on students than regular curriculum hours. Additionally, this is related to the purpose of the Free-Semester System. In the Free-Semester System, the student is encouraged to participate in various programs during creative participation activity hours. Furthermore, in the case of voluntary activity hours, when voluntary activity hours increase further, the self-concept and autonomy levels decrease. It is also necessary to determine how a voluntary activity works, whether students are participating in a true voluntary spirit, or if they cannot help participating in a voluntary activity because of certain rules. Furthermore, even if a voluntary activity takes place obligatorily, appropriate guidance has to be provided to advance the self-concept and autonomy levels of students.

Second, it is necessary to analyze programs connected to local community arts and culture institutes more specifically and systemize support for this. The local community can provide various faculties and content that schools cannot provide. If general students want to register for courses at local community arts and culture-related organizations, they need to go there or modify their schedule and so on, individual efforts parallel. If the content of a program has a demonstrated effect on student happiness, linking plans for students to take part in local community arts and culture programs can be made more easily.

We are currently passing through the fourth year since the Free-Semester System was implemented. The analysis in this study demonstrated that perhaps all art and culture education programs have meaning, but not all are statistically significant. Activities that demonstrated a positive effect on students need governmental support parallel to the benefits for students. For this, these programs connected to local community arts and culture institutes warrant further discussion regarding how to set the parameters for the range of club activity.

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